

## THE NATURAL HISTORY OF *ONCOCNEMIS PIFFARDI* (WALKER) (LEPIDOPTERA: NOCTUIDAE)<sup>1</sup>

TIM L. McCABE

Biological Survey, New York State Museum, Albany, New York 12230

*Abstract.*—The natural history of *Oncocnemis piffardi* (Walker) is described and the larva and pupa are illustrated. Larvae have been field-collected as well as cultured on *Spiraea latifolia* (Art.) Borkh., its natural host. *Elpe semiothisae* (Brooks) (Tachinidae) and an apparently undescribed *Mesocharus* (Ichneumonidae) were reared from field-collected larvae. The *Mesocharus* is a hyperparasite of yet another ichneumonid.

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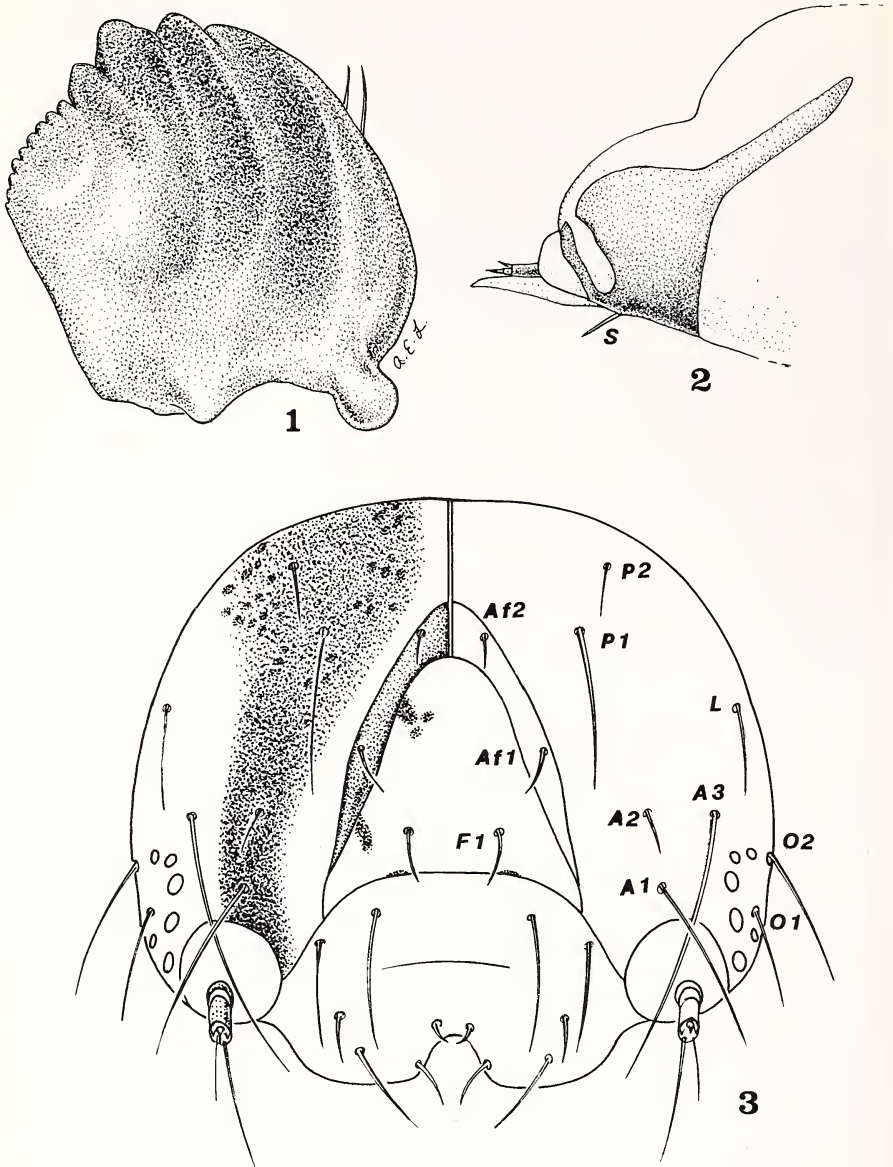
In 1978, I attempted to identify the host of *Oncocnemis piffardi* (Walker, 1862) by providing newly eclosed larvae an assortment of the most common plants in their environs, the Adirondack Mountains near Indian Lake, New York. The larvae had hatched from ova obtained from a female from the previous summer; ova overwinter in this species. When the larvae failed to feed on the first dozen plants provided, another dozen different species were made available. This process was repeated until over 100 different plants had been provided. The only acceptable host discovered was *Spiraea latifolia* Ait. (Borkh.) (Rosaceae), but by the time this was evident the few surviving first-instar larvae were so impoverished that they succumbed to disease.

Having established *S. latifolia* as a host, I revisited my collecting site in 1979 and searched *Spiraea* stands in June, when larvae should have been nearly full grown. At that time several acres of *Spiraea* had been defoliated by *O. piffardi* and larvae were much in evidence on the bare stems of *Spiraea*. Unfortunately, I had to spend the following 2 months in another state and it wasn't until 1980 that I continued field work in the Adirondacks. In 1980, the numbers of *O. piffardi* had decreased dramatically but larvae could still be found shortly after dusk with the aid of a lantern. A larva habitually rests with its body held parallel to the main stem, frequently choosing a dead or denuded vertical twig. Adults were obtained in the laboratory by rearing the nearly grown wild-caught larvae on fresh *Spiraea* leaves. Two additional adults found feeding on composite blossoms were taken at dusk. One moth was nectaring on Joe-Pye-Weed, *Eupatorium purpureum* L., and the other was on *Aster umbellatus* Mill.

Two wild-caught larvae had been parasitized. One of the parasites was *Elpe semiothisae* (Brooks) (Diptera: Tachinidae) which was previously known to be a parasite of geometrid and tortricid larvae (Sabrosky, 1975). Also, an apparently undescribed *Mesocharus* wasp (Ichneumonidae) was obtained. It was a hyperparasite of yet another ichneumonid wasp judging from the size and contents of an associated ichneumonid cocoon.

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Figs. 1-3. 1. Oral face of left mandible. 2. Hypopharyngeal complex. 3. Head capsule, frontal view.

ULTIMATE INSTAR LARVA

*General* (Fig. 4). Head 2.6 mm wide (N = 14); total length 35.0 mm (fully-distended, preserved larvae). Abdominal prolegs present on 3rd through 6th and 10th



Fig. 4. *Oncocnemis piffardi*, last instar larva, Adirondack Mountains, New York.

segments. Body protuberant on A-8; prothoracic shield with a pair of prominent longitudinal stripes.

*Coloration* (living material). Head and body gray; head with midfrontal black band which continues onto prothoracic shield; body with slight rufous tinge along mid-dorsal line; sides striated with various shades of gray; subventricular line white for anterior half of body, fading to gray posteriorly.

*Head* (Fig. 3). Epicranial suture 1.2 times height of frons; 2nd adfrontal seta (Af2) posterior to apex of frons; pigmented band present from lower region of head to vertex, but interrupted by antennal base; ocellar interspaces between Oc1 and Oc2 equal to diameter of Oc2; Oc2 to Oc3 equal to one-half diameter of Oc3; Oc3 to Oc4 equal to diameter of Oc3; Oc4 to Oc6 approximately twice diameter of Oc4; Oc4 to Oc5 approximately twice diameter of Oc4.

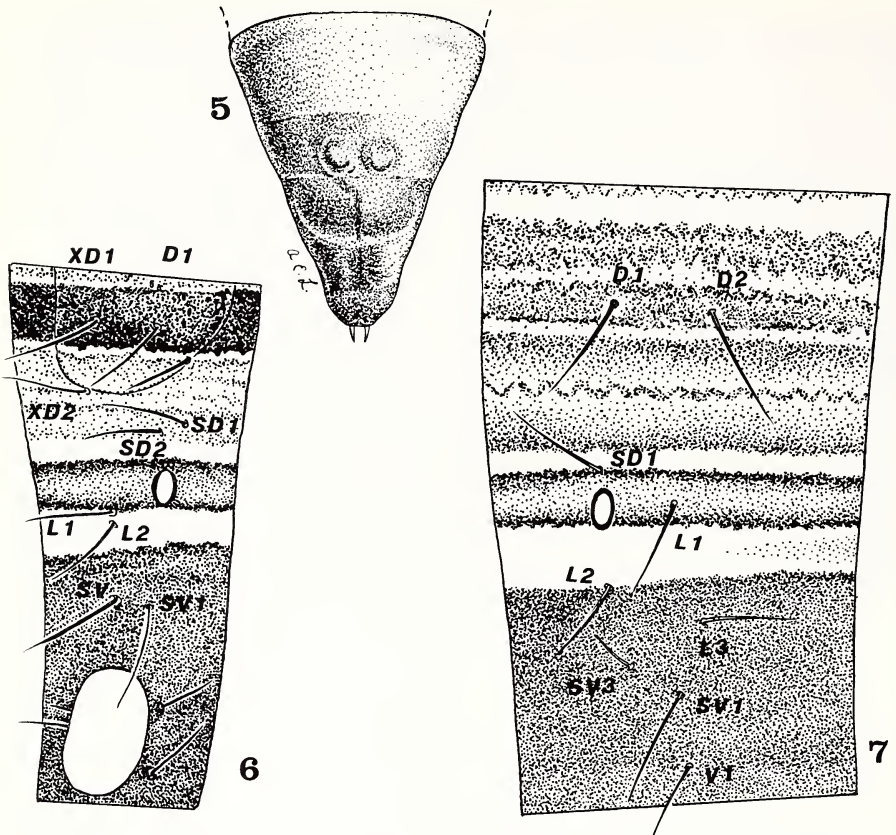
*Mouthparts. Hypopharyngeal complex* (Fig. 2). Spinneret with distal lip surpassing second segment of labial palpus, bare; Lp3 1.5 times length of Lp2; stipular setae (S) subequal in length to Lp's, including seta; distal, proximomedial and proximolateral regions of hypopharynx all lack setae; labrum with median notch.

*Mandible* (Fig. 1). With sixth tooth of 8-9 low subteeth; oral face with 3 shallow ridges, no basal tooth.

*Prothorax* (Fig. 6). With a pair of prominent black subdorsal stripes; narrow spiracular band present in living material, but fades when preserved; prothoracic setae as illustrated.

*Abdominal segments.* Ab-1 (Fig. 7) with primary setae as shown; Ab2-8 similar,





Figs. 5-7. 5. Pupal cremaster. 6. First thoracic segment. 7. First abdominal segment.

Ab-8 with a low pair of dorsal protuberances; Ab9 and 10 slope sharply downwards giving an outline characteristic of *Oncocnemis* species.

*Crochets*. Uniordinal, 18-25 per 3rd proleg; 18-27 per 4th, 21-31 per 5th, 26-33 per 6th, and 22-32 for the anal proleg (N = 14).

*Pupal cremaster* (Fig. 5). Terminating in a pair of heavy spines.

*Material examined*. 14 specimens, 6 miles east of Indian Lake, 555 meters, lat. 43.45.30 long. 74.10.14, Hamilton Co., New York, determined and reared by T. L. McCabe. Cultures are coded tlm 80-59, 80-124, and 80-184.

#### DIAGNOSIS

The dorsal hump on Ab-8 of the larva is apparently not evident in other previously reported *Oncocnemis* larvae (Crumb, 1956), although I have seen it in *Oncocnemis figurata pallidior* Barnes (reared on *Symphoricarpos occidentalis* Hooker) and in the closely related *Apharetra purpurea* McDunnough, *Sympistis melaleuca* (Thunberg),

and *Homohadena badistriga* (Grote). The pupal cremaster of *O. piffardi* differs very little from that of *Homohadena badistriga*; terminal spines are not as heavily chitinized.

#### ACKNOWLEDGMENTS

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